REMARKS

Claims 1 through 7, 9 through 15 and 17 through 20 and new Claim 21 are pending in the application.

Claim 1 has been amended to reflect that coatings in accordance with the invention are advantageously continuous. Support for this amendment can be found in the Application-as-filed, for example on Page 4, lines 25 through 29.

Claim 1 has also been amended to clarify that the films of the invention beneficially exhibit a sliding coefficient of friction of less than 0.45. Support for this amendment can be found in the Application-as-filed, for example on Page 11, line 30 through Page 20, lines 8 through 10.

Claim 21 has been added to complete the record for examination and highlight advantageous embodiments of the invention. Claim 21 is directed to advantageous films including crosslinked coating(s) formed from an acrylate copolymer comprising from about 35 to 68 mol % methylmethacrylate comonomer and copolymerized comonomer forming intermolecular crosslinks, in which the coated side(s) of said film exhibits a coefficient of sliding friction of less than 0.42 in the absence of antiblocking agents. Support for Claim 21 can be found in the Application-as-filed, for example on Page 11, line 30 through Page 12, line 8 and Page 18, Table 1.

Text within the Application-as-filed beginning on (I) Page 11, line 1; (II) Page 20, line 9; (III) Page 23, line 28 and (IV) Page 24, line 13 has been amended to address an apparent translational error. In particular, the text within these sections has been amended to reflect that the specific measurement is of the sliding coefficient of friction. Support for this amendment can be found within the Application-as-filed, for example on Page 20, lines 9 through 10

Applicants respectfully submit that this response does not raise new issues, but merely places the above-referenced application either in condition for allowance, or alternatively, in better form for appeal. Reexamination and reconsideration of this application, withdrawal of all rejections, and formal notification of the allowability of the pending claims are earnestly solicited in light of the remarks which follow.

The Claimed Invention is Patentable in Light of the Art of Record

Claims 1 through 7, 9 through 15, and 17 through 20 stand rejected over European Patent Application 1 176 004 ("EP 004") in view of the Encyclopedia of Polymer Science ("Polymer Science") and further in view of United States Patent No. 5,096,784 ("US 784") to Culbertson et al.

It may be useful to briefly consider the invention before addressing the merits of the rejection. White-colored, biaxially oriented polyester films are known for use in lidding applications, such as yoghurt cup lids. Polyester films are particularly attractive for such lidding applications because they can provide a smooth, shiny surface that is considered esthetically pleasing by the consumer.

Although aesthetically beneficial, the pigments incorporated into polyester films to impart color can detrimentally influence other properties. The more pigments and the larger the pigments incorporated into polyester films, the greater the risk of tearing and delamination of the lidding as the yoghurt package is being opened, for example. Titanium dioxide is known to have a relatively small particle diameter. Lidding film incorporating titanium dioxide as the sole pigment has thus been found to be less prone to tearing and delamination. The use of titanium dioxide alone is further known to provide a particularly smooth and shiny film surface. As noted above, such smooth surfaces are typically considered aesthetically pleasing by consumers.

Unfortunately, the smooth surfaces of such titanium dioxide filled films have a tendency to adhere to each other during film manufacturing, a phenomenon commonly referred to as "blocking." Titanium dioxide filled lidding films thus suffer from inferior winding performance. (The Examiner's attention is kindly directed to the Application-as-filed on Page 5, lines 13 – 19).

Various strategies to address blocking are known in the art. It is known to incorporate larger particles into polyester films to avoid blocking, for example. However, such larger particles introduce detrimental properties into the resulting lidding films, as noted above.

Specific coatings, commonly referred to as slip coatings, are also known to lower the coefficient of friction of film surfaces, and thus improve blocking. In addition to improved blocking, slip coatings also increase the release properties of the resulting films. Slip coatings incorporating silicone resin are particularly well known. Unfortunately, such slip coatings can interfere with the resulting films ability to adhere to subsequently applied printing inks and lacquers. Poor bonding to printing inks and the like would be especially disadvantageous in consumer packaging films, such as lidding films.

Heretofore, conventional release agents, such as silicone, have been formed from altogether different chemical families than adhesion-promoting coatings. Traditional wisdom clearly indicates that widely differing chemical families would be required to promote bonding versus improving slip, as greater release represents the antithesis of bonding.

In sharp contrast to such conventional wisdom, Applicants have found that particular acrylic-based copolymer coatings impart advantageous slip properties to polyester films filled with titanium dioxide alone. More particularly, Applicants have surprisingly discovered that crosslinked continuous coatings comprising resin consisting essentially of an acrylate copolymer containing copolymerized comonomer forming intermolecular crosslinks impart a coefficient of

sliding friction of less than 0.45 to the resulting film surface. Such a result is altogether unexpected in light of conventional wisdom, to say the least.

Accordingly, the claims are directed to white, biaxially oriented polyester film having a base layer B that includes pigment and/or filler consisting essentially of titanium dioxide. At least one of the two surfaces of the film has been provided with a continuous, crosslinked coating comprising resin consisting essentially of an acrylate copolymer containing copolymerized comonomer forming intermolecular crosslinks. Altogether unexpectedly, the claimed films exhibit a coefficient of sliding friction of less than 0.45 in the absence of antiblocking agents within the coating.

In particularly advantageous embodiments, the films of the invention are coated with acrylate copolymer that includes from 35 to 68 mol % methylmethacrylate ("MMA") comonomer and the resulting film exhibits a coefficient of sliding friction of less than 0.42 in the absence of antiblocking agents, as reflected in Claim 21.

The primary reference does not teach or suggest the claimed invention.

As correctly noted by the Examiner, EP 004 is directed to lidding films. In contrast to the claimed invention, EP 004 notes a broad range of particulate fillers as suitable for use within its films, including comparatively large fillers such as calcium carbonate. (Claim 8). EP 004 discloses a mixture of fillers within its initial working example. (Paragraphs 0065 – 0067). EP 004 further discloses that its films may be coated in order to improve their performance in later processes. EP 004 broadly notes that its films may be coated to improve adhesion to subsequent coatings or to provide improved antistatic properties, for example. (Paragraph 0044) In contrast to the opinion urged within the Office Action, EP 004 evidences the state of conventional wisdom by generically noting that acrylic coatings may be used to improve the adhesion of the resulting film to printing inks. EP 004 then goes on to expressly recommend the coatings of EP-A-0 605 130 to improve adhesion of its films to printing inks. (Paragraph 0045).

EP 004 thus does not teach or suggest the claimed invention. EP 004 more particularly does not teach or suggest film that includes pigment and/or filler consisting essentially of titanium dioxide, in which the film has been provided with a crosslinked continuous coating comprising resin consisting essentially of an acrylate copolymer containing copolymerized comonomer forming intermolecular crosslinks, wherein the coated side(s) of the film exhibits a sliding coefficient of friction of less than 0.45. And EP 004 most certainly does not teach or suggest such films having coating(s) formed from an acrylate copolymer comprising from 35 to 68 mol % MMA comonomer, in which the coated side(s) of the film exhibits a coefficient of sliding friction of less than 0.42.

Polymer Science does not cure the deficiencies in EP 004.

Polymer Science is merely an encyclopedic reference generically directed to polyester films. Polymer Science broadly notes that in-line coatings may be used to improve slip. (Page 201, first full paragraph). Polymer Science then goes on to disclose that film additives determine surface roughness. (Page 204, first fill paragraph). Polymer Science broadly teaches that in-line coatings may be applied to "alter the surface characteristics of the film." (Page 207, first full paragraph). Polymer Science further discloses that such in-line coating may be used to impart slip or adhesion to the film. (Page 209, second and third paragraphs). Polymer Science is altogether silent as to specific coating compositions used to impart such properties, however.

Polymer Science thus does not teach or suggest the claimed invention. Polymer Science more particularly does not teach or suggest film that includes pigment and/or filler consisting essentially of titanium dioxide, in which the film has been provided with a crosslinked continuous coating comprising resin consisting essentially of an acrylate copolymer containing copolymerized comonomer forming intermolecular crosslinks, wherein the coated side(s) of the film exhibits a sliding coefficient of friction of less than 0.45. And Polymer Science most certainly does not teach or suggest such films having coating(s) formed from an acrylate

copolymer comprising from 35 to 68 mol % MMA comonomer, in which the coated side(s) of the film exhibits a coefficient of sliding friction of less than 0.42.

US 784 similarly does not cure the deficiencies in EP 004.

US 784 is directed to magnetic tapes having a nodule surface. (Col. 1, lines 5 – 17). The nodules form "islands" rising from the surface of the film. (Col. 4, lines 44 – 46). US 784 goes on to describe the nodules as discrete entities dotting the surface of the film. US 784 cautions against inter-nodule contact, which purportedly results in a "ridged pattern" of coating. (Col. 9, lines 53 – 60). Hence, the surface of the film must not be so "completely covered" that few islands exist. (Col. 9, lines 63 – 68).

The nodules are noted to be formed from a "high" MMA copolymer. (Col. 9, lines 40 – 42). US 784 notes that the nodules may include up to 90 mol % MMA, for example. (Col. 7, lines 19 – 22). The nodule composition may further include colloidal silica, a known slip agent. (Col. 10, lines 26 – 29). The nodule composition may also include external cross-linkers. (Col. 7, lines 45 – 50).

As noted in US 784, the higher the MMA concentration, the greater hardness the nodule will display. (Col. 7, lines 14 – 15). The working examples evidence such conventional wisdom, indicating that nodules having an MMA concentration of 85 % provide the lowest kinetic coefficient of friction, coating to coating. In contrast, nodules having an MMA concentration of 60% were noted to block. (Table III, Cols. 13 and 14). Consequently, US 784 recommends the incorporation of a slip agent for nodules having an MMA concentration of less than 70 mol %. (Col. 14, lines 64 – 68). US 784 does not teach or suggest the inclusion of pigments and/or fillers within its films.

US 784 thus does not teach or suggest the claimed invention. US 784 more particularly does not teach or suggest film that includes pigment and/or filler consisting essentially of

titanium dioxide, in which the film has been provided with a crosslinked continuous coating comprising resin consisting essentially of an acrylate copolymer containing copolymerized comonomer forming intermolecular crosslinks, wherein the coated side(s) of the film exhibits a sliding coefficient of friction of less than 0.45. In fact, US 784 teaches away from the recited continuous coatings by instead requiring incomplete coverage.

And US 784 most certainly does not teach or suggest such films having coating(s) formed from an acrylate copolymer comprising from 35 to 68 mol % MMA comonomer, in which the film exhibits a coefficient of sliding friction of less than 0.42 in the absence of antiblocking agents. US 784 instead teaches that compositions including such a modest MMA content would block. US 784 further teaches the incorporation of slip agent for compositions having a MMA content of less than 70 %.

Applicants respectfully submit that there would have been no motivation to have combined the cited references. Applicants respectfully submit that merely because the references can be combined is not enough, there must still be a suggestion. MPEP 2143.01 (section citing Mills). EP 004 is directed to lidding. US 784 is directed to magnetic tapes. These are altogether different endeavors, to say the least.

However, even if Applicants had combined the cited references (which they did not), the claimed invention would not result. EP 004 discloses lidding films. Polymer Science generically notes that coatings may be used to alter the surface characteristics of films. US 784 is directed to unfilled magnetic tape film having discrete nodules on its surface.

Consequently, even if the art of record were combined (which, again, should not be done), the recited film that includes pigment and/or filler consisting essentially of titanium dioxide, in which the film has been provided with a crosslinked continuous coating comprising resin consisting essentially of an acrylate copolymer containing copolymerized comonomer forming intermolecular crosslinks, wherein the coated side(s) of the film exhibits a coefficient of

sliding friction of less than 0.45 in the absence of additional slip or anti-blocking agents would not result. As noted above, US 784 teaches away from films having continuous coatings.

And the combination most certainly does not teach or suggest such films having coating(s) formed from an acrylate copolymer comprising from 35 to 68 mol % MMA comonomer, in which the film exhibits a coefficient of sliding friction of less than 0.42 in the absence of antiblocking agents. As noted above, US 784 likewise teaches away from such advantageous embodiments.

None of the cited references addresses the issue solved by the instant application, i.e. the provision of comparatively smooth surfaced lidding films having improved windability. Accordingly, they can not suggest a solution to that problem. The instant invention resides in the selection of particular elements from a wide number of possibilities to solve a specific problem, i.e. the recited combination of titanium dioxide filled film provided with a continuous coating comprising acrylate copolymer to provide films exhibiting the recited coefficient of friction of less than 0.45.

Accordingly, Applicants respectfully submit that Claims 1 through 7, 9 through 15 and 17 through 21 are patentable in light of EP 004, Polymer Science and US 784, considered either alone or in combination.

CONCLUSION

It is respectfully submitted that Applicants have made a significant and important contribution to the art, which is neither disclosed nor suggested in the art. It is believed that all of pending Claims 1 through 7, 9 through 15 and 17 through 21 are now in condition for immediate allowance. It is requested that the Examiner telephone the undersigned if any questions remain to expedite examination of this application.

It is not believed that extensions of time or fees are required, beyond those which may otherwise be provided for in documents accompanying this paper. However, in the event that additional extensions of time and/or fees are necessary to allow consideration of this paper, such extensions are hereby petitioned under 37 CFR § 1.136(a), and any fee required is hereby authorized to be charged to Deposit Account No. 50-2193.

Respectfully submitted,

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